

CAR T Cells against Prostate Cancer

A novel treatment paradigm to solid cancer

Technology

Prostate cancer, as one of the prevailing cancer types in men, is characterized by highly expressed Prostate-Specific Membrane Antigen (PSMA). This renders PSMA a suitable diagnostic marker, as well as a promising target for treatment of prostate cancer. Here we present a proprietary PSMA-targeting chimeric antigen receptor (CAR) platform including two novel receptors that target distinct, PSMA epitopes with demonstrated excellent *in vitro* or *in vivo* activity.

In a preclinical mouse model, excellent performance of one of the two CAR was observed for focal therapy as cancer cells were completely eliminated. A local therapy could be highly attractive to treat early stage prostate cancer as it will avoid, or at least reduce, systemic-associated toxicities related to CAR T cell activation at “off-tumor” tissues that express the PSMA antigen at lower levels. Furthermore, systemically administered PSMA CAR T cells were able to prevent tumor outgrowth upon two cycles of non-ablative low-dose chemotherapy. Notably, the CAR T cells are amenable to focal application and to combination therapy with non-ablative low-dose chemotherapy upon systemic application. In addition to licensing of the patents, we offer knowhow and expertise in studying the function of CAR T-cells *in vitro* and *in vivo*.

Innovation

- PSMA-specific chimeric antigen receptors
- Superior anti-PSMA antibody
- High antigen-specific activation and cytotoxicity of CAR T cells
- Humanized variants available
- Effective in mouse model
- Inhibition of tumor growth with low-dose docetaxel chemotherapy

Application

- Prostate cancer treatment
- Focal injection of PSMA CAR T cells
- Systemic application in combination with chemotherapy

Responsible Scientists

Prof. Dr. Toni Cathomen
Prof. Dr. Philipp Wolf

Inst. for Transfusion Medicine
and Gene Therapy, Urology

Patent Status

EP, US, JP, CN pending

Earliest Priority Date

27.06.2018

Reference Number

2018050201/ZEE,
2019121202/ZEE

Status: Nov-24



CTF – The R&D Company of the
Freiburg University and the Freiburg
University Medical Center

universität freiburg

Contact

Dr. Markus Schwab
Campus Technologies Freiburg GmbH
Stefan-Meier-Str. 8 | D-79104 Freiburg
Email: markus.schwab@campus-technologies.de
Tel: +49 (0)761 203-4987
Fax: +49 (0)761 203-5021